

Library of
MIDDLEBURY
COLLEGE
Spec. Coll. (1)

974.35
H17s

*Rev. Mr. Prime, from his
very obedient,
F. Hall.*

STATISTICAL ACCOUNT
OF THE
TOWN OF MIDDLEBURY,
IN THE
STATE OF VERMONT.

PART FIRST.

BY FREDERICK HALL,

PROFESSOR OF MATHEMATICS AND NATURAL PHILOSOPHY IN MIDDLEBURY
COLLEGE, FELLOW OF THE AMERICAN AND CONNECTICUT ACADEMIES
OF ARTS AND SCIENCES, OF THE AMERICAN GEOLOGICAL SOCIETY, COR-
RESPONDING MEMBER OF THE LINNEAN SOCIETY OF NEW ENGLAND,
AND HONORARY MEMBER OF THE LITERARY AND PHILOSOPHICAL SO-
CIETY OF NEW YORK.

BOSTON:

PRINTED BY SEWELL PHELPS, NO. 5, COURT STREET.

1821.

ACCOUNT OF MIDDLEBURY, VT.

MIDDLEBURY, a post town, and the capital of Addison county, is situated on both sides of Otter Creek, north by west from Rutland thirty-two miles, south-east from Vergennes eleven, and five hundred and eleven north-east from the city of Washington. The centre of the town is about fourteen miles east from Lake Champlain.

The latitude of the court house is $43^{\circ}, 49', 51''$, north. Its longitude, west from Greenwich, is $73^{\circ}, 10', 15''$.

Boundaries.

On the north, the township is bounded by New Haven and Bristol; on the west, by Cornwall and Weybridge; on the south, by Salisbury, and on the east, by Ripton.

The boundary lines from north to south are a little more than six miles in length; those running from east to west, about seven. The town contains not far from forty-two square miles, or twenty-six thousand eight hundred and eighty acres. It extends over the summit of the western ridge of the Green Mountain.

Charter.

Its charter was granted by Benning Wentworth, governor of New Hampshire, November 2, 1761; that state then claiming the whole territory, lying between Connecticut River and Lake Champlain.

Rivers.

Middlebury River, or, at least, a principal branch of it, has its origin in the town of Hancock, passes through

Goshen, and a corner of Ripton, and directing its course to the westward, mingles its waters, in the south part of Middlebury, with those of Otter Creek. The turnpike road from Vergennes to Windsor is, for a considerable distance, built on, or near, one of the banks of this stream, which presents to the traveller's eye a number of highly romantick prospects. It meets the river, and crosses it, at the foot of the mountain, a little east of the glass factory.

From that point, in ascending, you keep in the vicinity of the stream, for more than a mile, hearing, constantly, the murmuring sound of the water, pouring down the cliffs, situated far beneath you. It is, in several places, not less than one hundred and fifty feet lower than the road; and yet a line, falling, perpendicularly, on the middle of the stream, would not be more than half that distance from the centre of the highway. This deep canal, lined on both sides by lofty forest trees, and exhibiting, all along, immense blocks of grey limestone, was, in all probability, produced by the operation of water. The length of the period requisite for its generation, we have not the means of determining; though there is reason to believe, that many centuries have elapsed, since the work commenced.

There was, doubtless, a time, when the waters, flowing down from the higher parts of the mountain, met obstructions, which, during numerous years, were insurmountable. Small lakes or ponds were thus formed. The earthy and vegetable matter, brought by the water from the high lands, was here deposited. In consequence of successive deposits, the bottom of these ponds gradually rose, and, after the waters had attained to a certain height, they attacked the natural mound, where it was least impregnable, and opening for themselves a channel, flowed off, and left the land naked, on which they had quietly reposed for ages. A number of small level tracts are to be seen on the mountain, which are manifestly alluvial, and which were formed, it is likely, in the manner above described.

This rivulet, winding its way along the mountain, furnishes trout, (*salmo solar*) in abundance. The fish are

small, often weighing less than an ounce a piece, but are remarkably tender, and of an excellent flavour. They are caught in the summer, dressed, and brought to this village for sale. The price varies from nine to twelve cents a pound.

A large proportion of the land, contiguous to Middlebury River, or in its vicinity, after it leaves the mountain, is also alluvial. Logs, three feet in diameter, have been discovered five or six feet below the surface, while the earth above them was covered with forest trees, which must have been some centuries in arriving at their enormous magnitude ;—a sufficient proof of the high antiquity at which the first deposit was made. I am informed by Joshua Hyde, Esq. a proprietor of the land, and one of the earliest inhabitants of the town, that in digging wells near this river, after penetrating the vegetable mould, which is not deep, and after passing through a stratum of fine sand, five or six feet in thickness, you come to a bed of coarser sand, in which water, at no great depth, is invariably found.

The land adjoining this stream is level, easily tilled, and yields fine crops of grass and grain. It is, however, less productive, at present, than it was immediately after its natural growth was removed.

But the principal river, of which Middlebury can boast, is *Otter Creek* ;—a name, probably, derived from the circumstance of its having, formerly, been much frequented by the otter. It is a river of considerable size ; being one hundred and seventy-five feet in width opposite my house. For twenty miles, towards its source, it is uncommonly deep, for so narrow a stream, and its current remarkably moderate. In the spring, when the snow on the mountain is dissolving, it is navigable with boats, of several tons burden, from Pittsford to Middlebury—a distance of twenty-four miles. Logs sufficient to keep two saw mills in operation, during most of the year ; together with a large quantity of wood for fuel, and cedar posts for fence, are brought down in rafts. Most of the wood, destined to supply our fires, is landed more than a mile above the village, and conveyed to it, in summer, or

autumn, on carts and wagons. This is sold, at this time, at \$1,50 a cord.

But few fish are found in this stream. Though *trout* exist, in multitudes, in the shallow, rapid, pellucid waters of Middlebury River, they seldom venture down into the deep, and often turbid waters of Otter Creek. *Perch* (*perca fluviatilis*) have been occasionally caught, and a few trout. Eels (*muræna anguilla*) are tolerably numerous. They seem partial to deep water which rests, as this does in many places, on a muddy bottom: they are taken with hooks. Near the water, a fire is kindled in the evening, by which they are drawn from their slimy lurking places, and enabled to see the bait. An experienced angler informs me, that he has, the past summer, frequently caught some, which weighed from five to seven pounds each.

Two years since, a number of gentlemen, in this and the neighbouring towns, formed the project of transferring several kinds of fish from Lake Champlain to Otter Creek, hoping that they would multiply there, and thus produce a publick benefit. The experiment was made. A number of pike, (*esax lucius*) or pickerel, bass, (*perca ocellata*) perch, and *sheepshead* were, at different places, thrown into the creek. A confident expectation is entertained, that they will propagate and flourish in this stream, but a sufficient time has not elapsed fully to settle the question.

The waters of Otter Creek must, at some ancient epoch, have overspread a much larger surface than they occupy at the present day. For many miles above this place, most of the land, within a few rods of the stream, on one side or on the other, and sometimes on both, is, beyond contradiction, alluvial. At certain points, the alluvion extends back fifty or sixty rods from the present channel. In causing a ditch to be dug, the past season, about forty rods long, in this *made land*, I had a good opportunity to examine the different kinds of earth, thrown up, in different places. In some, it was a fine siliceous sand, nearly pure, and could not be, in the least, affected by diluted nitric, or sulphuric acid. In others, it was a mixture of sand, clay and limestone. By dropping on it a little ni-

tric acid, a brisk effervescence was produced. In one place, the earth was of a reddish colour and gave a strong odour of sulphur, which probably arose from the decomposition of sulphuret of iron, brought, perhaps, by the water, from Brandon, or Pittsford, where this ore abounds.

Between Middlebury and Vergennes, the navigation is prevented by several water falls. There is one, in this village, where the whole mass of water descends, perpendicularly, at a single leap, twenty feet. This cataract, in consequence of the numerous admirable situations which it affords for mills of all descriptions, may, with propriety, be regarded as one of the leading sources of the wealth and prosperity of the town. A bridge, forming a communication between the eastern and western parts of the borough, has been thrown across the creek, a few feet above the falls.

A number of manufacturing establishments, whose machinery is impelled by water, have been erected in the vicinity of the bridge. I shall commence with a description of the

Manufactories

situated on the *eastern* side of the river.

The first is a grist mill, owned by Nathan Wood & Co. It is of stone, and the form of its base is that of an L. Its length, on the side next the water, is forty-five feet; on the east side seventy-six; on the street forty-five, and it contains five sets of stones, with screens and other apparatus, moving with sufficient power to manufacture into flour eighty thousand bushels of grain annually. The situation of this mill is singular; and the plan, in part new, was formed by an ingenious architect, Mr. Lavius Filmore, to whom I am indebted for the following particulars relating to it. It stands on a solid rock, projecting into the creek about thirty feet up-stream from the falls.

After levelling the rock sufficiently for the foundation of the building, a vault was cut in it forty-three feet long, twenty-five deep, and eighteen wide, which brought it nearly even with the surface of the water at the foot of the cataract. Then an inlet was formed, twenty-five feet

in length, through the solid rock, from the bed of the stream to the vault, through which water, in sufficient quantity to carry all the stones, and other machinery, flows into a floom, forty-three feet long, six wide, and eighteen deep, fortified by solid rock on all sides, except one, where the water, in the ordinary manner, is thrown on six *tub-wheels*, built on an improved construction, and placed in the bottom of the vault. The water, after acting on the wheels, collects itself into a single channel, and passing through a subterraneous outlet, cut, for the purpose, in the rock, under the bed of the stream, discharges itself into the creek, below the falls.

From such a situation many important advantages are derived. The mill can never be endangered by too great a pressure of water; not even when the river is the highest. The inlet and outlet of the floom, being formed in solid rock, is subject to no decay. The wheels are so situated as to be entirely secured, at all seasons, from frost.

The next establishment (north of the preceding) is a large cotton manufactory, erected by Maj. David Page, who has politely furnished me with a description of it. It is constructed of grey and white limestone, or marble, and its walls are thick and very substantial. It is one hundred and fifty feet in length, thirty-seven wide, six stories high at one end, and three at the other. The present proprietor, Mr. Joseph Hough, informs me, that the building contains at this time (December, 1820,) eight hundred and forty spindles for cotton, fifteen *power looms*, (or looms, which are moved by water) with all the warping and dressing apparatus needful, together with two woollen carding machines. The spindles produce a sufficient quantity of yarn daily, for five hundred yards of sheeting. The whole expense of converting the yarn (taking it from the spindle) into cloth, is about four cents a yard. The looms are tended by females. The goods manufactured are exhibited for sale in an apartment of the same building.

On the opposite side of the river is another cotton manufactory, owned by Mr. John Warren, who communicated the following facts. The building is of stone, fifty-eight feet in length, thirty-two in width, and forty in

height, containing six hundred spindles, with all other necessary apparatus. They yield yarn enough daily, for two hundred yards of sheeting. Adjoining this is another stone building, in which are eight *power looms*, weaving, on an average, one thousand yards of cloth a week. Under the same roof is a double fulling mill, or two stocks on one wheel, which, for twenty years past, has fullled twelve thousand yards of cloth annually: also a double carding machine, which cards from six to twelve thousand pounds of wool in a year.

Proceeding down the creek, from the bridge, on the western side, after passing two saw mills, two grist mills, a clothier's works, and some other establishments of minor importance, you come to the *marble manufactory*. The marble, in this village, which is now wrought, on a large scale, and extensively diffused over the country, was discovered by Dr. Ebenezer W. Judd, the present principal proprietor, as early as the year 1802. A small experiment in working it was made, he tells me, in 1805. A building, on a very limited plan, was erected, and machinery for sawing the marble (the idea of which had its origin in the inventive mind of the proprietor) was then first put in operation.

In 1806, a new and commodious building, two stories high, and destined to comprise sixty saws, to be moved by water, was erected. In 1808, this enlarged establishment went into operation, and has continued to the present day.

The saws are made of soft iron, without teeth, and are similar, in form, to those which are used in sawing marble by hand, in the large cities of Europe. The softer they are, the longer they last. This, to some, may appear paradoxical. But the explanation given by the conductor is, to me, tolerably satisfactory. In the operation a hard siliceous sand is always employed—moistened by the dropping of water from above—through which the saw, in its vertical motion, is constantly passing. Now, the softer the saw is, the more strongly the moistened sand adheres to it; and this sand assists in wearing away the stone: whereas, if the saw were steel, or hardened iron,

little or no sand would adhere to it; the saw would come directly in contact with the marble, and wear away itself, nearly as fast as it wore the stone. A *leaden* saw, he remarked, is found to divide a block of marble quicker than one made of iron. The saws are put in motion by a crank, which is turned by a water wheel.

The marble has, till lately, been obtained chiefly from a quarry, situated within a few feet of the mill. During three or four of the last years, much has been procured, at the time of low water, from the bottom of the creek, immediately above the falls. It is raised from its bed partly by means of wedges, but principally by blasting. The mode of blasting is somewhat singular. A hole is drilled, with a large bar, six or eight feet deep, and charged with three or four pounds of powder. The explosive force is often truly astonishing. I am told, that one hundred and sixty tons of stone have, sometimes, been raised at a single blast.

The marble, after being sawn into slabs, is manufactured into tomb stones, tomb tables, curriers' tables, jambs, mantle pieces, hearths, window and door caps and sills, side boards, tables, sinks, and various other kinds of furniture. These articles are transported to Montreal, Quebec, Boston, New York, and even to Georgia. The machinery has sawn, annually, from five to ten thousand feet, since the year 1808. This method of sawing by water creates a vast saving of manual labour. All the saws are tended by a single person, whose time is not half occupied in this employment.

In the year 1814, the sales of marble

amounted to	\$8,031,00
1815,	7,018,77
1817,	6,496,29
1819,	7,498,59

The annual expense attending the estab-

lishment is about	3,500,00
-----------------------------	----------

Besides the extensive manufactories above described, there are many individuals engaged in the various mechanic arts. I have collected information, which is believ-

ed to be correct, respecting the number of their shops and establishments, within the limits of the village at the present period, (December, 1820); and they are as follows:

3 Hatters' shops	1 Painter's
6 Shoemakers'	2 Coopers'
2 Tailors'	2 Tinmen's
4 Milliners'	2 Potteries
3 Saddlers'	2 Manufactories of pot- ash
2 Goldsmiths'	3 Tanneries
1 Clothier's works	2 Bakehouses
7 Blacksmiths'	2 Cabinetmakers'
1 Gunsmith's	9 Housejoiners'
1 Glazier's	4 Masons.
4 Wheelwrights'	

Those, beyond the limits of the *borough*, but comprehended within the boundaries of the town, are the following.

2 Potteries	1 Tailor's
1 Clothier's works	3 Saw mills
1 Wheelwright's shop	2 Masons
2 Blacksmiths'	5 Housejoiners'
2 Shoemakers'	1 Cabinetmaker's.

About three quarters of a mile, down the creek, from the bridge, and a few rods beyond the north line of the town, but owned, in part, by gentlemen belonging to the village, are an oil mill, a paper mill, a saw mill and a clothier's works.

Face of the Country.

Except in the north-easterly part, which extends to the Green Mountain, Middlebury cannot be regarded as a mountainous, or hilly township; nor is it, like some districts of New England, a wide-spread, monotonous, uninviting plain. The surface is gently undulating; but nowhere swells into lofty and rugged elevations, nor sinks into deep and gloomy glens. Separate from the Green Mountain, Chipman's Hill is the highest land in the

town. Its elevation (by the barometer) above the level of the water in Otter Creek, below the falls, is four hundred and thirty-nine feet.

Minerals.

The uppermost stratum of this hill consists of vegetable mould, and a very coarse sand, partly siliceous, and partly calcareous. This sand is, doubtless, the result of the disintegration of rocks, with which the surface was anciently composed. It contains a multitude of fragments, whose rough edges are removed by the attrition of water, or by decomposition, so that they resemble the rounded pebbles, which occur at the bottom of rivulets. Some of them are milky quartz, and nearly transparent. Not far from the summit of this hill, as well as in several other places in the vicinity, I have met with an aggregate of mica and feldspar.

Schorl.

This mineral is rare in Middlebury. It is sometimes found connected with grey limestone. I have in my possession a large specimen of black schorl, imperfectly crystalized, imbedded in sky-coloured marble. It was dug from the cellar of the new collegiate building.

Garnet.

On the eastern side of the creek, back of the academy, may be seen garnets, sparingly diffused on the surface of the calcareous rocks. Their size is very minute, often not exceeding that of a pin's head. The form of the crystals is dodecaedral. Their colour is reddish brown.

Hornblende

is not uncommon. It seldom occurs alone; but generally mixed, in a greater or less proportion, with feldspar, and may then be called sienite. It all appears to be *out of place*.

Common Jasper,

of a dark brown colour, in solitary masses, is found in various parts of the town. A few years since, a mass

weighing more than a ton, was taken out of the alluvial land in my garden. Its shape was globular, and evidently made so by the friction of water.

Alumine, or Clay.

The clay, which is employed here in the manufacture of bricks, is far from being pure. Almost universally, it contains a considerable proportion of carbonate of lime, in sand, or in small masses, commonly not larger than pigeons' eggs. The bricks, when burnt, are handsome, and wear the appearance of being very substantial and durable. But this appearance is deceptive: for when allowed to become penetrated with moisture, these *morceaux* of limestone, which they imbosom, whose carbonic acid had been expelled by the heat of the kiln, and they, consequently, converted to lime, *slack*, and, by their enlargement, cause the bricks to crack, and crumble to pieces.

A number of gentlemen, in this village, who have erected brick buildings, have not been careful to expose their bricks a sufficient length of time to the action of the elements before they were used. Hence several buildings, even in the infancy of their years, exhibit, by their exfoliations, indications of premature old age.

Bricks, which are of a suspicious character, should never be laid in a wall, especially where moisture can have free access to them, till they have been exposed to the weather during a long storm of rain; or plunged in a vessel of water, and suffered to continue there, till they shall have become completely saturated with the liquid. Those, which remain a few days unimpaired, after the application of either of these tests, may, with perfect safety, be employed in the walls of any part of the building.

No *ores* of much importance have been found in Middlebury. There is, on the Green Mountain, near the line which divides this town from Salisbury, a bed of

Sulphuret of Iron,

connected with carbonate of lime. It was discovered in laying out the town, by the influence which it exerted on

the surveyor's needle. He* has informed me that, for about one hundred and fifty rods, he could not make the needle of his compass *traverse*, and was therefore obliged to run the line by erecting stakes. The ore belongs to that variety denominated *magnetic pyrites*. The quantity has not been ascertained. I have examined the locality; but the land, being still overspread by trees, logs and shrubs, afforded me no opportunity, except at one place, to see the mineral; yet, as it influenced the magnet at points considerably distant from each other, the quantity of ore must be extensive. Its colour is a bronze yellow, with stripes of brown. Before the blowpipe, it exhales a strong odour of sulphur. The same effect may be produced by dropping a little of its powder on a live coal, or on a heated fire shovel. It is very frangible. It contains common sulphuret of iron. I have a number of beautiful cubes and dodecaedrons obtained here.

Iron is never made from this kind of ore. It may, however, be employed for a valuable purpose. By exposure to the air, or to moisture, it readily decomposes. It may, therefore, easily be converted into sulphate of iron, or *copperas*. May we not look forward to the period, when some enterprising person will here erect an establishment for the manufacture of this useful article?

Magnetic Oxide of Iron.

This species of iron ore has been met with in several places, but not in any considerable quantity. It has been seen in no other form but that of regular octaedric crystals. It occurs here imbedded in limestone, in argillite, and in a fine grained chlorite. The crystals are small, but very perfect; have a metallic lustre, and act powerfully on the magnet.

Limestone,

which may, with a comparatively moderate heat, be changed into lime, exists in almost every quarter of the town. The greatest deficiency is near the north-eastern

* The Honourable Gamaliel Painter.

extremity, which lies on the mountain. The rocks there are chiefly quartzeous; usually of a light brown colour, and excessively hard. I have seen one—a beautiful milk-white quartz, transparent at the edges—which would weigh twenty-five or thirty tons. The quantity of lime made in the town, is amply sufficient to satisfy the demand of its inhabitants for this article.

Marble,

of the finest texture, and susceptible of a high polish, is found here in inexhaustible abundance. The soil indeed of the whole township appears to rest on a vast basis of marble. In more than a hundred places does the marble make its appearance above the surface. It is arranged in strata, somewhat irregular, and of different thicknesses, but all inclining more or less to the plain of the horizon. It is of various colours, from a pure white to a deep grey, verging to a black.

Most of the marble in this region I have, till within a moderate period, supposed was unquestionably primitive, because I could discover no vegetable or animal remains or impressions in it. But recently I have been told, by one of Dr. Judd's workmen, that he had assisted in removing a block of marble from the bed of the creek, in which shells were visible. If this be a fact, (the person may possibly have been deceived; and I have not learned, that the shells attracted the attention of any other individual) it plainly demonstrates, that the rock could not have been formed, when, according to Moses, "the heavens and the earth were finished," but at some posterior epoch, after the animal kingdom had been called into being, and a portion of it had perished. Had I witnessed the animal exuviae, imbedded in our marble, I should, without hesitation, have ranked it in the class of *transition*, or metalliferous limestone. But I must be allowed still to cherish the opinion, that it belongs to the primitive formation. I may hereafter find cause to change it, but cannot at present.

The marble reposes on argillite, with which it sometimes alternates; as in a pasture a few rods north of the

new college, and on the west bank of the creek, a little below the marble manufactory.* The argillite is in laminae, but is not easily divisible into plates sufficiently thin to be used as roof-slate. The structure of the marble is granular, but the concretions are commonly very minute. Its texture is compact. It will not sustain uninjured, the action of an intense heat. It is, therefore, not suitable for the jambs and backs of chimnies. The marble employed for these purposes, is brought down the creek on rafts, from Pittsford, and wrought, and sold, at the Middlebury marble manufactory.

The Pittsford marble is of different colours, but principally grey and white. It is all somewhat flexible. Dr. Judd furnished me with a slab of it, four and a half feet long, half an inch thick, and six inches wide. I placed its extremities on two chairs, and put a straight board on it, from one end to the other, and the slab bent, by its own weight, one and two tenths of an inch. I then moistened it with cold water, and it became more flexible, so that its distance, in the middle, from the incumbent board was one and six tenths of an inch. By endeavouring to depress it still lower, by placing my hand on it, the slab broke and was destroyed.

A white marble has been *quarried* and wrought, on a small scale, in the north part of Middlebury. It has received the name of the *Kirby marble*. When polished, it strongly resembles the statuary marble of Italy. I have, in my mineralogical cabinet, specimens, obtained both from this, and from Dr. Judd's quarry, which, in point of translucency, delicacy of texture, and general beauty, are not surpassed by any Carrara, or Parian marble, which has ever fallen under my observation.

Serpentine

has been found, in small masses, at a little distance from the new college building. Its colour is a light green, and at the edges it is very translucent.

* If the limestone be primitive, the argillite must be so too, and I have seen nothing to convince me, that this is not the case.

Water.

The minerals impart to the water in this village a property, which causes it to be denominated *hard water*, or renders it incapable of readily dissolving soap. It is impregnated with various earthy substances, but, chiefly, with carbonate and muriate of lime. It may be separated from its foreign ingredients, or, at least, be rendered far less contaminated, by means of common pot-ash, or pearl-ash. If you wish to clarify a hogshead of this water, or make it *soft*, and fit for washing, it may be effected, as experiment has repeatedly taught me, by infusing into it three or four quarts of good ashes, and stirring it with a stick, or, what is better, by procuring a lie from the ashes, and then pouring in a quantity of it, sufficient to render the water an easy solvent of soap.

Mineral Spring.

About a mile and a half east from the meeting house, on land belonging to the Hon. Daniel Chipman, there is a mineral spring, whose water is slightly chalybeate. It has been used, with beneficial effect, by persons, afflicted with cutaneous complaints. Taken internally it increases the appetite and, of course, gives a better relish for food. It never freezes.

Fertility of the Soil.

A large proportion of the township consists of land, which is arable, and very fertile, yielding to the industrious agriculturist plentiful crops of grain and grass. This part of the country may, perhaps, be considered rather more favourable to the production of the former, than the latter, of these articles. And yet, it affords fine pasturage, and rich meadows; and large droves of fat cattle are collected here, every autumn, for the Boston or Montreal market.

Several farmers have assured me, that certain tracts of their land have, in auspicious seasons, given them forty bushels of wheat to the acre. This, to some, may appear incredible, but I have no reason to call in question the correctness of the assertion. The character of my

informants is such as to preclude the possibility, at least, of intentional error. The wheat, which is not needed for the sustenance of the inhabitants, is transported, principally, to Troy, in the state of New York. The price of this article, here, in ordinary times, fluctuates between \$1,50 and 2,00 a bushel. At this time (December, 1820,) the best of wheat may be bought for \$1,00; and I have heard of instances, in which it has been procured for half this sum. An acre, it is said, will commonly yield a greater number of bushels of wheat than it will of rye.

Oats, barley, buck-wheat, peas, beans and potatoes are cultivated with success. The soil does not appear to be so well adapted to maize, or Indian corn, as that, which lies on Connecticut River. An individual, in this vicinity, however, has raised eighty bushels of corn on an acre.

Fruit Trees.

The peach tree is rarely to be seen in this part of the country. The stone germinates; the plant springs up and grows luxuriantly during one or two, and, sometimes, three or four years, and then perishes. The tree is supposed to be too tender to endure the severity of our winters. The few peaches, which are brought into the village for sale, from the neighbouring towns, are vastly inferior in point of size, beauty and deliciousness, to those produced in the southern and middle states.

Attempts have been made to *naturalize* the quince tree, but they have all proved ineffectual. The soil, or climate is manifestly unfriendly to it. I have never seen one growing in the town.

This region is particularly favourable to the growth of the apple tree. When the town was first settled by white people, its inhabitants devoted scarcely any attention to the rearing of orchards. Some, without making a trial, imbibed the notion, that the land was ill adapted to the production of this species of fruit. Others were deterred from planting orchards, by the narrow consideration, that they should not live to enjoy the good of their labour; forgetful of the old, but no less important maxim, "that

a man ought to live, as if he were to live here forever, and yet, as if he were to die to-morrow."

Owing to the operation of some cause, I know not what, a complete revolution in opinion has been brought about. There is now scarcely a farm in the town, which does not contain an orchard. Considerable improvements have been effected, within a few years, in our apple orchards, by ingrafting and inoculation. The best kinds of fruit are now raised, and in the highest perfection. The apples are larger, fairer, and better flavoured, than those, which grow in the older states. The pearmain, the seek-no-farther, the Rhode Island greening rank among our best apples. The usual price, in autumn, is between twenty-five and thirty-four cents a bushel, and that of cider from \$1,50 to 2,00 a barrel. The last fall, owing to the uncommon scarcity of money, apples were, in a few instances, bought for seventeen cents a bushel, and cider for \$1,00 a barrel.

We have an extensive variety of plumbs and cherries. The egg plumb, produced here, is of a large size, and delicious; but the tree is very short lived. Nearly all, which ornamented our fruit yards a few years since, are now dead.

The damson and three or four other sorts of plumb flourish here. Within a moderate period, however, a disease has fastened on many of the plumb trees, which has proved fatal to them. The first indication of it, which I have noticed, is the decay of some of the lower limbs. Others die, gradually, till the whole tree is finally destroyed.

In the spring of 1818, I observed two of my best trees beginning to fail, and resolved to search for the cause. I dug away the earth, about a foot deep, around one of them, and found, that the body of the tree, just below the surface of the ground, was, on one side, considerably swollen, and had become fungous. The wood, more than half round the stock, was dry, hard and spongy. With a sharp instrument, I separated the dead part of the wood from that, which was sound and healthy, and filled up the cavity, around the roots, with chip manure, over which was spread a coating, three or four inches thick, of rich

earth. The tree is now alive ; was loaded with fruit the last season ; and does not appear at all defective.

On the other tree, I made no experiment. The branches, one after another, withered away, till the whole perished, and in the succeeding autumn, owing to the progress, which the disease had made at the root, the tree was broken down by the force of the wind. The evil is, I imagine, attributable to the operation of a small worm, which insinuates itself between the bark and wood, and feeds, perhaps, on both. No worms were discovered, but there were holes in the bark and wood, which had the appearance of having been formed by them. By means of their work, the sap is prevented from circulating freely through the pores of that part of the tree ; the wood, consequently, becomes dry and defective, and the decayed part, gradually communicating its noxious qualities to the whole tree, effects its destruction.

The pear is but little cultivated. Why is it, that the inhabitants make no more exertions to rear this admirable fruit ? Our climate, surely, is not unfavourable to its growth. Those who have made the trial, have succeeded beyond their highest expectations. One of our townsmen,* whose farm lies about two miles from the village, has two large trees, which grew from pear twigs, set twenty years ago, in stocks of the thorn apple. They bear plentifully, and the fruit sells for about \$2,00 a bushel.

Some of the most delicious pears, which I have ever tasted, were produced in Scotland, in latitude as high as $55^{\circ} 50'$. I mention this circumstance to show, that the pear neither demands a long summer, nor the influence of a vertical sun.

The tree should be reared, not from the seed, for it is of very slow growth, but from inoculation, or from ingrafting. On an apple stock, the pear scion will not, it is believed, become a fruitful, and durable tree. These two kinds of trees have but little affinity for each other. The pear slip will flourish tolerably well in the apple tree,

for two or three years, but is then, for want of a stronger adhesion, liable to be broken off by the wind, or by its own weight.

The thorn apple adopts, without reluctance, the pear scion, and nourishes it as its own child. The stock, when somewhat less than an inch in diameter, should be sawn off just below the surface of the ground, so that the new tree may not be altogether dependent on the thorn for its support, but may itself take root in the soil. The scions, whether pear or apple, should be taken from young and thrifty trees. If they are cut from aged, decaying ones, they will not, Sir Humphrey Davy assures us, long survive the trees from which they were derived.

As his observations, on this subject, are peculiarly interesting, and may not have been perused by all my readers, I shall take the liberty to transcribe two or three paragraphs from his *Agricultural Chemistry*. He is speaking of the causes of decay in trees :

“The decay of the heart-wood,” says he, “seems to constitute the great limit to the age and size of trees. And in young branches from old trees, it is much more liable to decompose, than in similar branches from seedlings. *This is likewise the case with grafts.* The graft is only nourished by the sap of the tree to which it is transferred ; its properties are not changed by it ; the leaves, blossoms, and fruit are of the same kind, as if it had vegetated upon its parent stock. The only advantage to be gained in this way, is the affording to the graft from an old tree a more plentiful and healthy food, than it could have procured in its natural state ; it is rendered, for a time, more vigorous, and produces fairer blossoms and richer fruits. But it partakes, not merely of the obvious properties, but likewise of *the infirmities and dispositions to old age and decay of the tree whence it sprung.*”

“This seems to be distinctly shown by the observations and experiments of Mr. Knight. He has, in a number of instances, transferred the young scions and healthy shoots from old esteemed fruit-bearing trees to young seedlings. They flourished for two or three years ; but they soon became diseased and sickly, like their parent trees.”

This curious fact—that grafts taken from old trees will be short lived—has been amply demonstrated by experiments made in our own country. I shall mention but one instance. The Hon. Gamaliel Painter (whom I have before mentioned) obtained, at three different times, a number of scions from a venerable and favourite pear tree, above one hundred years old, in Salisbury in Connecticut. He set them all, with great care, in stocks of the thorn apple tree; but was unable to make any of them live more than two or three years. The one, which survived the longest, he at length noticed, was beginning to perish at the top. This part he cut off, with his penknife, and found the graft hollow; and the farther he cut down, the more its heart-wood was decayed. The next season it died.

I have heard it asserted, that the pear scion would vegetate, and become fruitful, if set in a small stock of the elm tree. Whether there be any truth in this assertion, I know not. The experiment might easily be made.

The Grape,

which has been cultivated in all ages of the world, the grape, so frequently mentioned in the scriptures, as well as in profane authors, and the largeness of whose cluster, cut at “the brook of Eshcol,” afforded the offspring of Jacob no unconvincing testimony of the richness of “the land of promise;”—does not, generally, flourish in Middlebury. The vine grows luxuriantly, but is, almost always, unfruitful. Its barrenness may be attributable to our ignorance of the proper mode of managing it. The pruning knife, I apprehend, is employed much too sparingly; the foliage is suffered to become too thick; it forms a covering to the fruit nearly impervious to the rays of the sun. But the young and tender grapes should at all times have a free and fair exposure to the influence of the sun. This is indispensable in order to their being early brought to a state of maturity.

Severe cutting, we are informed, by experienced gardeners, does not impair, but benefit the vine. If manag-

ed here, as it is in some parts of Europe, the vine, perhaps, might succeed.

It is there propagated, usually, by *cuttings*. The piece intended to be planted is taken, most of it, from the last year's growth, cutting the stock, however, a little below where it sprouted, the last season, from the old vine; so as to retain on the cutting a small quantity of the two years old wood. It should be about a foot long, and all its branches lopped off. Sometime in the early part of May, it should be placed in the ground, in an erect posture, or but little inclined, the larger end downward, so deep as to have the upper eye level with the surface, over which eye a small quantity of light earth should be spread, to prevent it from becoming too dry to sprout. The cuttings should be planted, one in each hill, the hills being about five feet apart, so that they may conveniently be hoed, in the same manner, that we hoe corn, or beans. Only one sprout should be allowed to grow, the rest being rubbed off with the hand, or cut away with a knife. This, when it rises sufficiently high, should be tied to a strong stake or pole, similar to a bean pole, driven into the earth, and rising above it five or six feet. The knife ought never to permit the vine to overtop the pole.

The soil should be light and rich. That the root may acquire strength, the vine should be very thoroughly pruned for two or three years. The pruning should be performed, both in the autumn and spring, as well as, occasionally, during the summer. The best time for effecting it, in the fall, is immediately after the leaves have fallen.

The grapes are always borne by shoots of the present year's growth, springing from the wood, which was produced the preceding year. Care should, therefore, be taken in pruning to preserve the most vigorous and handsome shoots of the present year; for these will be most likely to yield strong and healthy branches, to sustain and nourish the grapes the ensuing season. Cuttings commonly bear fruit the third year after planting.

There can be little doubt, I imagine, that the large purple grape, which grows spontaneously in many parts of New England, and possesses an excellent flavour, and,

perhaps, the Madeira grape also, might, with proper culture, be made to flourish here, and become fruitful. Possibly the vine might require covering in the winter; but this could be done, with very little labour, by bending it down to the ground, throwing a small quantity of straw over it, and on this placing a few shovelfull of earth. I am now endeavouring to raise grapes in the above described manner. The cuttings were planted two years ago. The last spring they were covered with blossoms, but bore no fruit. The next season, I shall probably have a crop of grapes.

Strawberries, Gooseberries, &c.

The white and red strawberry, the gooseberry, the red and black raspberry, the red and white currant are found, in great perfection, in some of our gardens.*

Currants.

Currants are here manufactured into wine. Many families make, at least, one small cask, annually, for their own consumption, and prefer it to wine made from grapes.

Gardening.

There is but little attention here given to the delightful art of horticulture. The inhabitants devote their time, principally, to objects, which are more lucrative, and, perhaps, in their estimation, more honourable. But they ought not to forget, that one of the greatest sovereigns of Rome, voluntarily, abandoned the imperial purple to become a practical gardener. To cultivate a small tract

* *Strawberry vines* should be set in *beds*. This mode is vastly preferable to that of cultivating them in hills. The labour is less, the vine more productive, and the fruit far cleaner. They should be set, one in a place, ten or twelve inches asunder, sometime in the last of the month of April, or near the commencement of May, and kept free from weeds. The bed should be thoroughly dug, and made rich by manure. The shoots, or *runners*, which will be very numerous, ought, during the first summer, to be frequently cut off, with a hoe, or with a pair of scissors. The second season, the vines may be allowed to cover the whole of the ground, and, afterward, will need no further weeding. They will continue to bear four or five years. In order to be certain of having this luxury, every summer, it will be proper to have a new bed set, once in two or three years. The field strawberry, by being cultivated in a garden, is greatly improved, both in size and flavour.

of land was, in his view, and in that of his eulogist, a high honour.

"Methinks I see great Dioclesian walk
In the Salonian garden's noble shade,
Which by his own imperial hands was made:
I see him smile, methinks, as he does talk
With the ambassador, who came in vain
T' intice him to a throne again."

No employment is a better preservative, or restorative, of health. Nothing can be more salubrious than the odour emanating from the newly dug ground, and from the blossoms of garden shrubbery. To a professional man; to one, whose occupation compels him to a sedentary life, and who is perpetually inhaling the noxious air of a confined study, what a treat is it, to go into the open air and labour an hour in his garden! It produces innumerable happy effects; it expels melancholy; it cheers the jaded spirits; it arouses and invigorates the deadened energies of the soul.

"Often amused with feats of gardening,
Delightful exercise, I work and sing!
And moving cheerful feel not half my toil,
Like swains that whistle, while they plough the soil.
Should any disbelieve, I here invite
Such infidels to come, and trust their sight."

There are, in Middlebury, no splendid gardens, adorned with elegant parterres, and spreading wall trees, and winding alleys, and gravelled walks, and artificial lakes; but there are many valuable kitchen gardens, in which may be found all the common esculent vegetables.

Carrots are grown, by some individuals, in large quantities for the purpose of being given to cattle, and especially to milch cows. They afford a very nutritious species of food, and cause them to yield milk more plenteously and richer. It is believed that cows, in this way, may be supported through the winter at considerably less expense (giving them, occasionally, a little hay) than they can, when supplied wholly with *barn fodder*.

The watermelon does not attain a high degree of perfection in our gardens. The fruit is puny in its size, and

not rich in its flavour. This is owing, I imagine, to the soil, which, in most parts of the town, is clayey. Excellent watermelons are produced at Burlington, and at Windsor, where the soil is lighter and more sandy.

Catalogue of Plants.

The following catalogue of plants, which are indigenous in the township of Middlebury, was prepared for me by Dr. Edwin James, a young gentleman, formerly of this place, who has, during a considerable period, assiduously applied himself to the study of botany, and who will, ere long, attain to distinguished eminence in this interesting branch of natural history.

Botanical Names.

Acalypha virginica, (*Willdenow.*)
Acer rubrum,
 saccharinum,
 striatum, (*Michaux.*)
 spicatum, (*Lamark.*)
Achillea millefolium, (*Smith.*)
Acorus calamus, (*Willd.*)
Actaea rubra, (*Bigelow.*)
 alba,
Adiantum pedatum, (*Willd.*)
Agrimonia eupatoria,
Agrostemma githago,
Agrostis vulgaris, (*Smith.*)
 alba, (*Willd.*)
 tenuiflora,
Aira flexuosa,
Alisma plantago, (*Michaux.*)
Allium tricoccum, (*Willd.*)
Alnus serrulata,
Alsine media,
Amaranthus oleraceus,
Ambrosia elatior, [*chaux.*)
Ampelopsis quinquefolia, (*Mi-*
Anemone virginiana, (*Willd.*)
 aconitifolia, (*Michaux.*)
 nemorosa,
Angelica triquinata,
Anthemis cotula, (*L.*)
Anthoxanthum odoratum,
Apocynum androsaemifolium,
 (*Willd.*)

Vulgar names.

Three-seed mercury.
 Red maple; soft maple.
 Sugar maple.
 Striped maple.
 Mountain maple.
 Yarrow.
 Sweet flag.
 Baneberry.
 Necklace-weed.
 Maiden-hair.
 Agrimony.
 Cockle.
 Red-top.
 White-top.
 ———
 Hair grass.
 Water plantain, mad-dog-weed.
 Wild leek.
 Alder.
 Succulent chick-weed.
 Pot amaranth.
 Hog-weed.
 False grape.
 Wind-flower.
 ———
 Low anemone.
 Angelica.
 May-weed.
 Sweet vernal grass.
 Dog-bane.

*Botanical Names.**Vulgar Names.*

Apocynum connabinum,	Indian hemp.
Aquilegia canadensis,	Wild columbine.
Aralia hispida,	Woody-stemmed sarsaparilla.
racemosa,	Spikenard.
nudicaulis,	Sarsaparilla.
Arenaria stricta,	_____
Arctium lappa,	Burdock.
Aronia botryapium, (Persoon.)	Shad-bush.
melanocarpa,	Black chokeberry.
Artemisia vulgaris, (Willd.)	Mug-wort.
Arum triphyllum,	Indian turnip.
Asarum canadense,	Wild ginger.
Asclepias syriaca, (L.)	Common milk-weed.
debilis, (Michaux.)	Slender milk-weed.
incarnata,	Swamp milk-weed.
quadrifolia,	_____
Aspidium acrostichoides, (Willd.)	_____
marginale,	_____
Asplenium rhizophyllum,	Walking leaf.
angustifolium,	Spleen-wort.
ebeneum,	Ebony spleen-wort.
Aster foliosus,	Star-flower.
novae angliae,	_____
cordifolius,	_____
corymbosus,	_____
puniceus,	_____
Azalea viscosa, (Pursh.)	White honey-suckle.
nudiflora,	Early honey-suckle.
Betula populifolia, (Willd.)	Poplar birch.
excelsa,	Tall birch.
papyracea,	Canoe birch.
lenta,	Spicy birch.
Bidens cernua,	Water-beggar-ticks.
frondosa,	Burr-mary-gold.
connata,	_____
Botrychium fumaroides?	_____
virginicum,	_____
gracile,	_____
Bromus secalinus,	Chess.
ciliatus,	_____
Calla palustris,	Water arum.
Callitriche verna,	Water star-wort.
intermedia,	_____
Caltha palustris,	American cowslip.
Campanula rotundifolia,	Hair-bell.
erinoides,	Prickly bell-flower.

*Botanical Names.**Vulgar Names.*

<i>Campanula perfoliata</i> ,	Clasping bell-flower.
<i>Cannabis sativa</i> ,	Hemp.
<i>Cardamine pennsylvanica</i> ,	Water cress.
<i>Carex retroflexa</i> ,	Sedge grass.
<i>stipata</i> ,	_____
<i>festucacea</i> ,	_____
<i>caespitosa</i> ,	_____
<i>crinita</i> ,	_____
<i>vestita</i> ,	_____
<i>tentaculata</i> ,	_____
<i>lupulina</i> ,	_____
<i>folliculata</i> ,	_____
<i>plantaginea</i> ,	_____
<i>Carpinus americana</i> , [chaux.]	Blue beech.
<i>Caulophyllum thalictroides</i> , (Mi-)	Blue cohosh.
<i>Ceanothus americanus</i> , (Willd.)	New Jersey tea.
<i>Celastrus scandens</i> ,	Staff-tree.
<i>Cerastium vulgatum</i> , (Smith.)	Mouse-ear chick-weed.
<i>Chaerophyllum claytoni</i> , (Pers.)	Poison cicily.
<i>Chelidonium majus</i> ,	Celandine.
<i>Chelone glabra</i> , (Willdenow.)	Snake-head.
<i>Chenopodium album</i> , (Smith.)	Pig-weed.
<i>botrys</i> ,	Oak-of-Jerusalem.
<i>Chimaphila maculata</i> ,	Spotted wintergreen.
<i>corymbosa</i> ,	Bitter wintergreen.
<i>Chrysanthemum leucanthemum</i> ,	Ox-eyed daisy.
<i>Chrysosplenium oppositifolium</i> ,	Water carpet.
(Willd.)	
<i>Cicuta maculata</i> ,	Musquash-root.
<i>bulbifera</i> ,	_____
<i>Circaea lutetiana</i> , (Vahl.)	Enchanter's night-shade.
<i>alpina</i> ,	Dwarf night-shade.
<i>Claytonia virginica</i> , (Pursh.)	Spring beauty.
<i>Clematis virginica</i> , (Willd.)	Virgin's bower.
<i>Cnicus lanceolatus</i> ,	Common thistle.
<i>altissimus</i> ,	Tall thistle.
<i>arvensis</i> , (Pursh.)	Canada thistle.
<i>Collinsonia canadensis</i> , (Willd.)	Horse balm.
<i>Comptonia asplenifolia</i> ,	Sweet fern.
<i>Convallaria canaliculata</i> ,	Clasping solomon-seal.
<i>multiflora</i> ,	Giant solomon-seal.
<i>racemosa</i> , (Pursh.)	Spiked solomon-seal.
<i>bifolia</i> , (Michaux.)	Dwarf solomon-seal.
<i>Coptis trifolia</i> , (Pursh.)	Goldthread.
<i>Cornus canadensis</i> ,	Low cornel.
<i>sanguinea</i> ,	Red osier.
<i>alba</i> ,	White dog-wood.
<i>sericea</i> ,	Blue-berried dog-wood.

*Botanical Names.**Vulgar Names.*

<i>Cornus paniculata</i> ,	Panicked dog-wood.
<i>Corydalis coccularia</i> , (<i>Pers.</i>)	Yellow breeches.
<i>glauca</i> ,	Colic-weed.
<i>fungosa</i> ,	Climbing colic-weed.
<i>Corylus americana</i> , (<i>Willd.</i>)	Swamp hazlenut.
<i>rostrata</i> ,	Beaked hazlenut.
<i>Crataegus coccinea</i> ,	Thorn-bush.
<i>pyrifolia</i> ,	Pear-leaf thorn.
<i>flava</i> ,	Yellow-berried thorn.
<i>crus-galli</i> ,	Thorn tree.
<i>Cuscuta americana</i> ,	Dodder.
<i>Cymbidium hyemale</i> ,*	Adam and eve.
<i>corallorhizum</i> ,	Coral-root.
<i>odontorhizum</i> ,	Toothed coral.
<i>pulchellum</i> ,	Grass-pink.
<i>Cynoglossum officinale</i> ,	Hound-tongue.
<i>Cyperus poaeformis</i> , (<i>Pursh.</i>)	Bog grass.
<i>uncinatus</i> ,	
<i>flavescens</i> , (<i>Willd.</i>)	Yellow grass.
<i>Cypripedium pubescens</i> ,	Yellow ladies' slipper.
<i>humile</i> ,	Low ladies' slipper.
<i>Dalibarda fragarioides</i> , (<i>Michaux.</i>)	Spice-root, dry strawberry.
<i>violaeoides</i> ,	False violet.
<i>Datura stramonium</i> , (<i>L.</i>)	Thorn-apple, (introduced.)
<i>Dentaria diphylla</i> , (<i>Willd.</i>)	Tooth-root; trickle.
<i>Diervilla humilis</i> , (<i>Pers.</i>)	Bush honey-suckle.
<i>Digitaria sanguinalis</i> , (<i>Willd.</i>)	Finger grass.
<i>Dirca palustris</i> ,	American mezereon.
<i>Dracaena borealis</i> ,	Dragoness plant.
<i>Dulichium spathaceum</i> , (<i>Pers.</i>)	Galingale.
<i>Elodea campanulata</i> , (<i>Pursh.</i>)	Swamp John's-wort.
<i>Elymus striatus</i> , (<i>Willd.</i>)	Wild rye.
<i>hystrix</i> ,	Hedge-hog grass.
<i>Epigaea repens</i> ,	Trailing arbutus.
<i>Epilobium spicatum</i> ,	Great willow herb.
<i>lineare</i> ,	
<i>palustre</i> ,	
<i>tetragonum</i> ,	
<i>Equisetum arvense</i> ,	Horse-tail.
<i>hyemale</i> ,	Scouring rush.
<i>sylvaticum</i> ,	

* *Corallorhiza hyemale* of Nuttall, who has at length corrected the error, which had crept into all former descriptions of this interesting plant. See his *Genera of North American Plants*.

<i>Botanical Names.</i>	<i>Vulgar Names.</i>
Erigeron canadense, strigosum, heterophyllum, philadelphicum, bellidifolium,	Pride-weed. _____ _____ _____ _____
Eriophorum angustifolium,	Cotton grass.
Erysimum officinale, barbarea,	Hedge mustard. Water radish.
Erythronium lanceolatum, (<i>Pursh.</i>)	Adder's tongue.
Eupatorium purpureum, (<i>Willd.</i>)	Joe pye.
verticillatum,	Canker-root.
perfoliatum,	Boneset; thorough-wort.
ageratoides,	_____
Fagus ferruginea,	Beech.
Festuca elatior,	Fescue grass.
Fluvialis fragilis?	River nymph.
Fragaria virginiana,	Wild strawberry.
Fraxinus acuminata,	White ash.
pubescens,	Black ash.
sambucifolia,	Water ash.
Galeopsis tetrahit,	Flowering nettle.
Galium trifidum,	Bed straw.
tinctorium,	Dyer's cleavers.
asprellum,	Rough bed straw.
triflorum,	_____
Gaultheria procumbens,	Spicy wintergreen.
serphyllifolia, (<i>Pursh.</i>)	Creeping wintergreen.
Gentiana saponaria, (<i>Willd.</i>)	Soap-wort gentian.
Geranium maculatum,	Crowfoot geranium.
robertianum,	Herb robert.
Geum virginianum,	Avens.
strictum,	Upright avens.
rivale,	Purple avens.
Glechoma hederacea,	Ground ivy.
Glycine comosa,	Slender wild bean.
apios,	Groundnut.
Gnaphalium margaritaceum,	Everlasting.
polycephalum,	Sweet-scented everlasting.
plantagineum,	Early everlasting.
uliginosum,	Mud everlasting.
Gratiola officinalis,	Hedge hyssop.
Hamamelis virginica,	Witch hazle.
Hedeoma pulegioides,	Penny-royal.
Hedysarum glutinosum,	Bush trefoil.
viridiflorum,	_____

*Botanical Names.**Vulgar Names.*

Hedysarum acuminatum,	Bush trefoil.
Helianthus trachelifolius,	Rough sunflower.
divaricatus,	Small sunflower.
decapetalus,	_____
tuberosus,	Artichoke, (introduced.)
Hepatica triloba, (<i>Pursh.</i>)	Liver-leaf.
Heracleum lanatum,	Cow parsley.
Hieracium venosum,	Vein-leaf; hawk-weed.
gronovii,	Small hawk-weed.
paniculatum,	Panicled hawk-weed.
fasciculatum, (<i>Pursh.</i>)	Great-toothed hawk-weed.
scabrum, (<i>Michaux.</i>)	Rough hawk-weed.
marianum, (<i>Willd.</i>)	(a variety of <i>H. gronovii</i> ?)
Houstonia coerulea,	Venus' pride.
Humulus lupulus,	Hop.
Hydrocotyle americana,	Water navel-wort.
Hyoseris amplexicaulis, (<i>Michaux.</i>)	_____
Hypericum canadense, (<i>Willd.</i>)	Square-stem'd St. John's-wort.
perforatum,	Common St. John's-wort.
corymbosum,	Tall St. John's-wort.
parviflorum,	Small St. John's-wort.
Hyssopus nepetoides, (<i>Pursh.</i>)	Giant hyssop.
Ilex canadensis, (<i>Willd.</i>)	Mountain holly.
Impatiens nolitangere,	Touch-me-not.
biflora,	Jewel-weed.
Inula helenium,	Elecampane.
Iris virginica,	Blue flag; wild iris.
Juglans cinerea,	Butternut.
squamosa,	Shagbark walnut.
porcina,	Pignut.
Juncus effusus, (<i>Smith.</i>)	Rush grass.
setaceus, (<i>Pursh.</i>)	_____
nodosus,	_____
tenuis,	_____
campestris,	_____
Juniperus virginiana, (<i>Willd.</i>)	Red cedar.
prostrata,	American savin.
communis,	Juniper.
Kalmia angustifolia,	Sheep poison.
Lactuca elongata,	Wild lettuce.
Lapathum acetosellum, (<i>Pers.</i>)	Field sorrel.
Lechea major, (<i>Willd.</i>)	Pin-weed.
minor,	_____
Leersia oryzoides, (<i>Pursh.</i>)	Cut grass.

*Botanical Names.**Vulgar Names.*

Lemna polyrrhiza,	Water flax-seed.
Leontodon taraxacum,	Dandelion.
Leonurus cardiaca,	Mother-wort.
Leptanthus graminea, (<i>Michaux.</i>)	Water star-grass.
Lilium canadense, (<i>Willd.</i>)	Meadow lily.
Lindernia dilatata, (<i>Muhlenberg.</i>)	Lindern.
Linnaea borealis, (<i>Gronovius.</i>)	Twin-flower.
Lobelia cardinalis, (<i>Willd.</i>)	Cardinal flower.
inflata,	Indian tobacco.
pallida,	_____
Lonicera parviflora, (<i>Caprifolium</i> <i>parviflorum</i> , <i>Pursh.</i>)	_____
hirsuta,	Rough wood-vine.
Lycopodium clavatum,	Club-moss.
complanatum,	Ground pine.
dendroideum,	Tree-moss.
lucidulum,	Moon-fruit pine.
Lycopus europaeus, (<i>Michaux.</i>)	Water horehound.
virginicus,	_____
Lysimachia racemosa,	Bulb bearing loose strife.
ciliata,	Common loose strife.
quadrifolia, (<i>Willd.</i>)	Whorled loose strife.
Malaxis liliifolia,	Tway blade.
ophioglossoides,	Snake-mouth.
Malva rotundifolia,	Low mallows.
Medeola virginica,	Indian cucumber.
Melilotus officinalis,	Melilot.
Menispermum canadense,	Moon-seed.
Mentha borealis,	Meadow-mint.
viridis,	Spear-mint.
Mimulus ringens,	Monkey flower.
Mitchella repens, (<i>L.</i>)	Partridgeberry.
Mitella diphylla,	Currant leaf.
prostrata,	_____
Monarda oblongata, (<i>Aiton.</i>)	High balm ; (naturalized.)
Monotropa lanuginosa, (<i>Michaux.</i>)	Bird's nest.
uniflora, (<i>Willd.</i>)	Beech drops.
Muhlenberghia erecta, (<i>Pers.</i>)	Wood grass.
Myosotis lappula,	_____
Myrrhis dulcis,	Sweet cicely.
Neottia cernua, (<i>Willd.</i>)	Ladies' tresses.
pubescens,	Blood-vein ladies' tresses.
Nepeta cataria,	Catnep.
Nuphar advena,	Yellow pond lily.
kalmiana, (<i>Aiton.</i>)	Little yellow pond lily.
Nymphaea odorata, (<i>Willd.</i>)	White pond lily.

*Botanical Names.**Vulgar Names.*

Oenothera biennis,
chrysantha,
Onoclea sensibilis,
struthiopteris,
Orchis ciliaris,
lacera,
spectabilis,
orbiculata, (*Pursh.*)
dilatata,
fimbriata, (*Willd.*)
Orobanche virginiana,
Osmunda cinnamomea,
interrupta,
regalis,
Ostrya virginica,
Oxalis acetosella,
dillenii,
stricta,
Oxycoccus macrocarpus,

Panax quinquefolia,
trifolia,
Panicum crus-galli,
glaucum,
capillare,
latifolium,
nitidum,
Parnassia caroliniana,
Pastinaca sativa,
Pedicularis canadensis,
Penthorum sedoides,
Pentstemon pubescens,
Phleum pratense,
Phalaris arundinacea,
Phryma leptostachya,
Phytolacca decandra,
Pinus balsamea,
canadensis, (*Pursh.*)
nigra,
alba,
strobilus,
pendula,
microcarpa,
resinosa,
rigida,
Plantago major,
Plantanus occidentalis,
Poa pratensis, (*Smith.*)

Scabish.
 Dwarf scabish.
 Sensitive fern.
 Buck's-horn brake.
 Yellow orchis.
 Ragged-lip'd orchis.
 Showy orchis.
 Round-leaved orchis.
 Giant orchis.
 Purple orchis.
 Cancer root.
 Flowering fern.

 Iron wood, hop horn beam.
 Wood sorrel.
 Ladies' sorrel.

 Cranberry.

 Ginseng.
 Dwarf groundnut.
 Barn grass.
 Foxtail panic.

 Grass of parnassus.
 Wild parsnip, (introduced.)
 Louse-wort.
 Virginian orpine.
 Beard tongue.
 Timothy grass.
 Ribbon grass.
 Lop-seed.
 Poke-weed.
 Fir tree.
 Hemlock.
 Double spruce.
 Single spruce.
 White pine.
 Tamarack.
 Red larch.
 Yellow pine.
 Pitch pine.
 Plantain.
 Button-ball tree.
 Meadow grass.

Botanical Names.

Vulgar Names.

<i>Poa compressa,</i>	Blue grass.
<i>quinquefida,</i>	Giant meadow grass.
<i>reptans, (Michaux.)</i>	Carpet grass.
<i>Polygala paucifolia, (Willd.)</i>	Flowering wintergreen.
<i>Polygonum punctatum, (Elliot.)</i>	Water pepper.
<i>aviculare, (Willd.)</i>	Knot grass.
<i>persicaria,</i>	Ladies' thumb.
<i>pennsylvanicum,</i>	Knee knot-weed.
<i>sagittatum,</i>	Prickly knot-weed.
<i>arifolium,</i>	Halbert knot-weed.
<i>convolvulus,</i>	Bind knot-weed.
<i>scandens,*</i>	Climbing buck-wheat.
<i>lapathifolium, (Muhl.)</i>	Sorrel knot-weed.
<i>Polypodium vulgare, (Willd.)</i>	Polypod.
<i>hexagonopterum,</i>	—
<i>Populus tremuloides, (Michaux.)</i>	White poplar.
<i>grandidentata,</i>	Tree poplar.
<i>angulata,</i>	Water poplar.
<i>balsamifera,</i>	Balsam poplar.
<i>Portulacca oleracea, (L.)</i>	Purslane.
<i>Potamogeton natans, (Michaux.)</i>	Broad-leaved pond-weed.
<i>fluitans, (Willd.)</i>	Long-leaved pond-weed.
<i>perfoliatum, (Mx.)</i>	Clasping pond-weed.
<i>gramineum,</i>	Grass-leaved pond-weed.
<i>lucens,</i>	Shining pond-weed.
<i>pectinatum,</i>	Brittle-leaved pond-weed.
<i>compressum,</i>	Flat-stemmed pond-weed.
<i>Potentilla, norvegica,</i>	Cinque-foil.
<i>anserina,</i>	Goose cinque-foil.
<i>canadensis,</i>	Common five-finger.
<i>Pothos foetida, (Michaux.)</i>	Skunk cabbage.
<i>Prenanthes alba, (Willd.)</i>	White lettuce.
<i>altissima,</i>	—
<i>cordata,</i>	—
<i>Prinos verticillatus,</i>	Winterberry.
<i>Proserpinaca palustris,</i>	Mermaid-weed.
<i>Prunella pennsylvanica,</i>	Heal-all.
<i>Prunus virginiana,</i>	Wild cherry.
<i>serotina,</i>	Choke cherry.
<i>americana, (Muhl.)</i>	—
<i>Pteris aquilina, (Willd.)</i>	Common brake.
<i>Pyrola rotundifolia,</i>	Shin leaf.
<i>secunda,</i>	One-sided shin leaf.

* *P. scandens*. Large tracts of land on the Green Mountain, in this part of the state, which were burnt over in the year 1816, are now covered with an immense quantity of this plant, and the great willow herb, *Epilobium spicatum*.

*Botanical Names.**Vulgar Names.*

<i>Quercus tinctoria,</i>	Black oak.
<i>discolor,</i>	False red oak.
<i>coccinea,</i>	Scarlet oak.
<i>rubra,</i>	Red oak.
<i>olivae-formis,</i>	Mossy-cup oak.
<i>alba,</i>	White oak.
<i>montana,</i>	Mountain oak.
<i>bicolor,</i>	Swamp white oak.
<i>Ranunculus acris,</i>	Common crowfoot.
<i>fluviatilis,</i>	River crowfoot.
<i>abortivus,</i>	Small-flowered crowfoot.
<i>hirsutus, (Curtis.)</i>	Rough crowfoot.
<i>bulbosus, (Willd.)</i>	Bulbous crowfoot.
<i>sceleratus,</i>	Celery crowfoot.
<i>Rhus typhinum;</i>	Sumach.
<i>glabrum,</i>	Sleek sumach.
<i>copallinum,</i>	Mountain sumach.
<i>toxicodendron,</i>	Poison ash.
<i>Ribes floridum,</i>	Wild black currant.
<i>triflorum,</i>	Gooseberry.
<i>gracile,</i>	Smooth gooseberry.
<i>Rosa corymbosa,</i>	Swamp rose.
<i>parviflora,</i>	Wild rose.
<i>rubiginosa,</i>	Sweet briar.
<i>Rubus villosus,</i>	High blackberry.
<i>strigosus,</i>	Red raspberry.
<i>occidentalis,</i>	Black raspberry.
<i>trivialis, (Michaux.)</i>	Dewberry.
<i>saxatilis,</i>	Rock blackberry.
<i>odoratus, (Willd.)</i>	Flowering raspberry.
<i>Rumex crispus,</i>	Dock.
<i>obtusifolius,</i>	—
<i>verticillatus,</i>	—
<i>Sagittaria saggitifolia,</i>	Arrow-head.
<i>latifolia,</i>	—
<i>heterophylla,</i>	—
<i>Salix conifera,</i>	Cone-gall willow.
<i>nigra,</i>	Brittle-joint willow.
<i>lucida,</i>	Shining willow.
<i>vitellina,</i>	Yellow willow.
<i>Sambucus canadensis,</i>	Black elder.
<i>pubescens,</i>	Red elder.
<i>Samolus valerandi,</i>	Brook-weed.
<i>Sanguinaria canadensis,</i>	Blood-root.
<i>Sanicula marilandica,</i>	Sanicle.
<i>Satyrium bracteatum,</i>	Satyrium.

*Botanical Names.**Vulgar Names.*

<i>Scirpus tenuis,</i>	Club-rush.
<i>acutus,</i>	Common bull-rush.
<i>Saxifraga nivalis,</i>	Early saxifrage.
<i>Scropularia marilandica,</i>	Fig-wort.
<i>Scutellaria galericulata,</i>	Scull-cap.
<i>lateriflora,</i>	Mad dog scull-cap.
<i>Senecio hieracifolius,</i>	Fire-weed.
<i>aureus,</i>	Rag-wort.
<i>Serpicula occidentalis,</i>	Little snake-weed.
<i>Sinapis nigra,</i>	Mustard.
<i>Sison Candense,</i>	Hone-wort.
<i>Sisymbrium amphibium,</i>	Water radish.
<i>Sium latifolium,</i>	Water parsnip.
<i>Smilax rotundifolia,</i>	Green briar.
<i>peduncularis,</i>	Jacob's ladder.
<i>herbacea,</i>	—
<i>Smyrnum aureum,</i>	Alexanders,
<i>cordatum, (Michaux.)</i>	—
<i>Solanum dulcamara, (L.)</i>	Bitter-sweet.
<i>nigrum,</i>	Deadly night-shade.
<i>Solidago ciliaris, (Willd.)</i>	Fringed golden-rod.
<i>altissima,</i>	Variable golden-rod.
<i>arguta,</i>	Sharp-notch golden-rod.
<i>bicolor,</i>	White golden-rod.
<i>lanceolata,</i>	Grass-leaf golden-rod.
<i>latifolia,</i>	Broad-leaf golden-rod.
<i>virga-aurea,</i>	Mountain golden-rod.
<i>Sonchus leucophaeus,</i>	Sow thistle.
<i>oleraceus,</i>	—
<i>Sorbus americana,</i>	Mountain ash.
<i>Sparganium ramosum,</i>	Bur-reed.
<i>simplex,</i>	Flag bur-reed.
<i>natans?</i>	Slender bur-reed.
<i>Spiraea salicifolia,</i>	White steeple bush.
<i>Staphylea trifolia,</i>	Bladder-nut.
<i>Streptopus roseus, (Michaux.)</i>	Rose bell flower.
<i>Symphitum officinale, (natural- ized.)</i>	Comfrey.
<i>Tanacetum vulgare, (naturalized.)</i>	Tansey.
<i>Taxus canadensis,</i>	Dwarf yew.
<i>Thalictrum dioicum,</i>	Meadow rue.
<i>cornuti,</i>	—
<i>polygamum,</i>	—
<i>Thesium umbellatum,</i>	False toad flax.
<i>Thlaspi bursa-pastoris,</i>	Shepherd's purse.
<i>campestris,</i>	Yellow seed.
<i>Thuja occidentalis,</i>	American arbor-vitæ.

*Botanical Names.**Vulgar Names.*

Viburnum acerifolium, (*Willd.*)
dentatum,
pyrifolium, (*Pursh.*)
pubescens,

Maple guelder rose.
 Arrow wood.
 Pear-leaf sheepperry.

Vicia sativa,
Viola asarifolia, (*Muhl.*)
blanda, (*Willd.*)
obliqua,
cucullata,
clandestina, (*Pursh.*)
canadensis,
striata,
rostrata,
pubescens, (*Willd.*)
Vitis labrusca, (*Michaux.*)
cordifolia,

Tare.
 Kidney-leaf violet.
 Smooth violet.
 Twisted violet.
 Blue violet.
 Ground violet.
 Woods violet.
 Striped violet.
 Beaked violet.
 Yellow violet.
 Fox grape.
 Frost grape.

Xanthium strumarium, (*Willd.*)
Xylosteum ciliatum,

Clott-bur.
 Twinberry.

Zanthoxylum fraxineum,

Prickly ash.